Abstract
Extraoral facial scanning using a mobile phone has emerged as a viable, cost-effective option for certain applications not requiring high precision, such as patient education and 3-dimensional (3D) digital smile design. This technological development is particularly promising for general practitioners (GPs) who may not be able to invest in expensive, complex digital impressioning devices. This article describes and illustrates a relatively simple and accessible workflow that avails digital 3D facial scanning benefits to GPs.

Reference
DAHER, René, et al. 3D Digital Smile Design With a Mobile Phone and Intraoral Optical Scanner. Compendium of Continuing Education in Dentistry, 2018, vol. 39, no. 6, p. e5-e8

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3D Digital Smile Design With a Mobile Phone and Intraoral Optical Scanner

Figures

Fig 1. 3D face scans in three positions: (a) relaxed neutral position, (b) smile position, (c) retracted cheeks. (d) Image of the mobile phone used for the facial scan.
Fig 2. Intraoral scanner used to make the digital impressions of the teeth.

Fig 3. Images showing point-by-point alignment procedure of the face (a) and intraoral (b) 3D models. The same landmarks were marked in each model and then aligned by pairs from 0 to 3 in this case. The result of merging the two models can be seen from a lateral view (c); the face scan was made transparent.
Fig 4. Images showing the face scan of the smile position with the virtual teeth adjusted following dimensions and positions in relation to the midline, interpupillary line, and desired width over length ratio.
Fig 5. Images showing three different 3D digital smile designs of the anterior teeth from a front view and 30-degree side view: (a) narrow central incisors with a 70% ratio of width over length, (b) regular central incisors with a 78% ratio of width over length, and (c) short central incisors with a 90% ratio of width over length.